

FROM BDSM 703 836 2021

(TUE) 9.16'03 15:36/ST. 15:35/NO. 4260034428 P 1

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Fax Tel. No.: 1-703-746-5194	Sent By:
Your Ref.:	Our Ref.: 999999 - 888
	Total Pages (Incl. Cover Page): 33
RE: U.S. PLANT PATENT APPLICATION 09/759,353 CHRYSANTHEMUM PLANT NAMED 'CHANOD'	

MESSAGE:

AS REQUESTED BY TELEPHONE, THE SUBSTITUTE
SPECIFICATION AND MARKED-UP SPECIFICATION
FILED ON AUGUST 21, 2003 ARE AGAIN PROVIDED.
PLEASE ACKNOWLEDGE SAME RECEIPT.

Benton S. Duffett Jr.

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025200-038

**SUBSTITUTE SPECIFICATION
FILED AUGUST 21, 2003**

BOTANICAL/COMMERCIAL CLASSIFICATION

Chrysanthemum mortifolium/Decorative Pot Mum

VARIETAL DENOMINATION

cv. 'Chanoud'

Summary of the Invention

The present invention comprises a new and distinct cultivar of *Chrysanthemum*, botanically known as *Chrysanthemum mortifolium*, and hereinafter is referred to by the cultivar name 'Chanoud'.

The new cultivar of the present invention was created at Nuaille, France during 1994 when plants of the 'Chadixi' cultivar (non-patented in the United States) were irradiated with gamma irradiation. Cuttings from the irradiated plant were used to produce new plants that were carefully studied. The new cultivar was selected during 1994 from among the rooted cuttings because of its distinctive combination of characteristics.

The 'Chadixi' parent was commercially available in France beginning in January 1992. The 'Chadixi' cultivar is not known to have ever been introduced for growing in the United States.

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It was found that the new *Chrysanthemum* cultivar of the present invention displays:

- (a) a low compact, well-branched, and generally uniform and spherical growth habit,
- (b) during October a profusion of attractive decorative light yellow double blossoms,
- (c) dark green leaves that contrast well with the light yellow blossoms, and
- (d) an ability to grow well in pots to provide an attractive potted gift plant.

The new cultivar is considered to be primarily an October-flowering greenhouse cultivar with natural flowering in weeks 42 to 43 at Nuaille, France. It can be grown well either singly or in clumps in pots. Also, the new cultivar is suited for growing in the landscape where it has withstood temperatures of 0° to -2°C. The blossoms commonly last in excess of three weeks on the plant. Pinching is helpful to further enhance branching; however, such pinching is not necessary since the plant already is naturally self-branching.

The new cultivar can be readily distinguished from its 'Chadixi' parent that exhibits purple blossoms. Unlike the 'Chadixi' parent the blossoms of the new

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cultivar of the present invention are light yellow in coloration. Such markedly different blossom coloration can be reliably used to distinguish the new cultivar from its parent.

Asexual reproduction of the new cultivar by cuttings initially taken during 1994 as performed at Nuaille, France, in a controlled environment has demonstrated that the characteristics of the new cultivar as herein described are firmly fixed and are retained through successive generations of asexual propagation.

The new cultivar also was tested during 1997 at Cambridge, Great Britain.

'Chanoud' has not been observed under all possible environmental conditions to date. Accordingly, it is possible that the phenotype may vary somewhat with variations in the environment, such as temperature, light, day length, contact with pesticides and/or subjection to growth regulation treatments.

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Brief Description of the Photograph

The accompanying photograph was obtained during October, 1996 and depicts three plants of the new cultivar while growing in a pot in a greenhouse at Nuaille, France. The plants were rooted during June, 1996, and accordingly were approximately four months of age. The generally spherical growth habit and the profusion of attractive light yellow double decorative blossoms with dark green foliage are illustrated.

Detailed Description

The chart used in the identification of colors described hereafter is the R.H.S. Colour Chart of the Royal Horticultural Society, London, England. In some instances more common color terms are provided and are to be accorded their usual dictionary significance. The plants described were grown in 20 cm. pots in greenhouses at Nuaille, France, three plants to a pot, and were rooted in mid-June, and were observed on October 20th. No growth regulation was used. The growing conditions approximated those commonly utilized for the commercial production of decorative pot mums.

Inflorescence:

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A. Capitulum

- | | |
|--------------------------------|---|
| <u>Type.</u> | - Decorative. |
| <u>Diameter across face.</u> | - Approximately 25 to 35 mm on average when fully expanded. |
| <u>Bud shape.</u> | - Rounded and wider than long. |
| <u>Bud size.</u> | - Approximately 8 to 12 mm in length on average and approximately 12 to 16 mm in diameter on average. |
| <u>Outside bud coloration.</u> | Yellow Group 10B. |
| <u>Number per plant.</u> | - Varies with cultural conditions. A 20 week old plant commonly bears approximately 600 to 900 flowers. |
| <u>Peduncle.</u> | - Commonly varies in length from approximately 2 to |

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5 cm on average and the
diameter commonly is 1 to
3 mm on average. The
color is near Yellow-Green
Group 146C.

Phyllaries.

- Five in number, elongated
and possess pointed tips,
approximately 8 to 15 mm
in length on average,
approximately 2 to 3 mm
in width on average, and
near Green Group 139A in
coloration.

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B. Ray florets

General tonality.

- Upper Surface: Yellow
Group 5D with some very
light red that increases
slightly towards the base.
Such red coloration is
difficult to describe more
fully and commonly
requires the destruction of
the flower for it to become
apparent.

- Under Surface: Yellow
Group 5D.

Number of ray florets.

- Varies with flower position
on the inflorescence and
cultural conditions.
Commonly approximately
120 to 180 on average.

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Size of ray florets.

- Varies with position and commonly range from approximately 0.8 to 3.5 cm in length on average and from approximately 0.2 to 0.6 cm in width on average.
- In contrast the floret coloration of the parent 'Chadixi' variety is Purple Group 75C with some slightly deeper shading and edges of Purple Group 75B.

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Configuration ray florets. - Acropetal with a dentate apex, a substantially straight base and a smooth margin.

Disc florets. - Disc florets are rarely formed and their presence or absence is influenced by the growing conditions. The observation of such disc florets has been found to be associated with short day cultural conditions. Even when disc florets are present, they typically are present in only a sparse quantity and are hidden from observation while being disposed beneath the ray florets. When such

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disc florets are sparsely
present, they tend to be
more capable of
observation at the extreme
end of blossom maturity
when the blossoms are
most fully open..

C. Reproductive organs

Androecium.

- When disc florets are
observed, some
androecium commonly are
present among such disc
florets.

Gynoecium.

- Present with ray florets at
the center of the capitulum
at the end of blooming.
When disc florets are
observed, gynoecium

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commonly are absent in

such disc florets.

Pollen.

- Generally formed in only a very sparse quantity at the end of blooming when disc florets are present and yellow- orange in coloration.

Fragrance.

- Weak and typical of Chrysanthemum.

Plant:

A. General Appearance

Height.

- Very short, and approximately 35 cm on average at four months of age.

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Width:

- Approximately 55 cm on average at four months of age.

B. Foliage

Color.

- Upper Surface: Generally between Green Group 137A and Green Group 139A.
- Under Surface: Generally between Green Group 137A and Green Group 139A with slightly more grey.

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Shape.

- Relatively short and narrow with short inferior lobes. The shape of the sinus base between lateral lobes is rounded.

Size.

- The leaves at the tip of the stem commonly are approximately 3.5 cm in length and commonly are approximately 1.7 cm in width. The leaves at the base of the stem commonly are approximately 10 cm in length and commonly are approximately 5 cm in width.

Bearing.

- Petiolate.

Texture.

- Fleshy.

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- | | |
|---|---|
| <u>Thickness.</u> | - Moderately thick. |
| <u>Serration.</u> | - Finely denticulate. |
| <u>Shape of base of leaf.</u> | - Acute with an obtuse tendency. |
| <u>Shape of tip of leaf.</u> | - Mucronate. |
| <u>Claw in base of sinus between lateral lobes.</u> | - Absent. |
| <u>Petiole.</u> | - Approximately 0.5 to 2 cm in length, and approximately 2 to 4 mm in thickness. The coloration commonly is very close to that of the leaves, and generally is between Green Group 137A and Green Group 139A. |

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Stems.

- Thin to medium and generally round in cross-section, strongly rigid, and commonly Yellow-Green Group 146C in coloration with no anthocyanin coloration.

Internode length.

- Very short, and commonly approximately 5 to 10 mm.

C. Resistance to Diseases

Requires no particular treatment when compared to other Chrysanthemum varieties.

D. Resistance to Insects

Requires no particular treatment when compared to other Chrysanthemum varieties.

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E. Response Period

The 'Chanoud' cultivar is natural blooming and the reaction period is not considered to be a significant characteristic.

However, such reaction period has been observed to commonly vary between 7.5 and 8.5 weeks.

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BOTANICAL/COMMERCIAL CLASSIFICATION

Dendranthema grandiflora *Chrysanthemum mortifolium*/Decorative Pot Mum

VARIETAL DENOMINATION

cv. 'Chanoud'

Summary of the Invention

The present invention comprises a new and distinct cultivar of Chrysanthemum, botanically known as *Dendranthema grandiflora* *Chrysanthemum mortifolium*, and hereinafter is referred to by the cultivar name 'Chanoud'.

The new cultivar of the present invention was created at Nuaille, France during 1994 when plants of the 'Chadixi' cultivar (non-patented in the United States) were irradiated with gamma irradiation. Cuttings from the irradiated plant were used to produce new plants that were carefully studied. The new cultivar was selected during 1994 from among the rooted cuttings because of its distinctive combination of characteristics.

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The 'Chadixi' parent was commercially available in France beginning in January 1992. The 'Chadixi' cultivar is not known to have ever been introduced for growing in the United States.

It was found that the new Chrysanthemum cultivar of the present invention displays:

- (a) a low compact, well-branched, and generally uniform and spherical growth habit,
- (b) during October a profusion of attractive decorative light yellow double blossoms,
- (c) dark green leaves that contrast well with the light yellow blossoms, and
- (d) an ability to grow well in pots to provide an attractive potted gift plant.

The new cultivar is considered to be primarily an October-flowering greenhouse cultivar with natural flowering in weeks 42 to 43 at Nuaille, France. It can be grown well either singly or in clumps in pots. Also, the new cultivar is suited for growing in the landscape where it has withstood temperatures of 0° to -2°C. The blossoms commonly last in excess of three weeks on the plant.

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Pinching is helpful to further enhance branching; however, such pinching is not necessary since the plant already is naturally self-branching.

The new cultivar can be readily distinguished from its 'Chadixi' parent that exhibits purple blossoms. Unlike the 'Chadixi' parent the blossoms of the new cultivar of the present invention are light yellow in coloration. Such markedly different blossom coloration can be reliably used to distinguish the new cultivar from its parent.

Asexual reproduction of the new cultivar by cuttings initially taken during 1994 as performed at Nuaille, France, in a controlled environment has demonstrated that the characteristics of the new cultivar as herein described are firmly fixed and are retained through successive generations of asexual propagation.

The new cultivar also was tested during 1997 at Cambridge, Great Britain.

'Chanoud' has not been observed under all possible environmental conditions to date. Accordingly, it is possible that the phenotype may vary somewhat with variations in the environment, such as temperature, light, day length, contact with pesticides and/or subjection to growth regulation treatments.

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Detailed Description

The chart used in the identification of colors described hereafter is the R.H.S. Colour Chart of the Royal Horticultural Society, London, England. In some instances more common color terms are provided and are to be accorded their usual dictionary significance. The plants described were grown in 20 cm. pots in greenhouses at Nuaille, France, three plants to a pot, and were rooted in mid-June, and were observed on October 20th. No growth regulation was used. The growing conditions approximated those commonly utilized for the commercial production of decorative pot mums.

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Inflorescence:

A. Capitulum

- | | |
|--------------------------------|---|
| <u>Type.</u> | - Decorative. |
| <u>Diameter across face.</u> | - Approximately 25 to 35 mm on average when fully expanded. |
| <u>Bud shape.</u> | - Rounded and wider than long. |
| <u>Bud size.</u> | - Approximately 8 to 12 mm in length on average and approximately 12 to 16 mm in diameter on average. |
| <u>Outside bud coloration.</u> | Yellow Group 10B. |
| <u>Number per plant.</u> | - Varies with cultural conditions. A 20 week old plant commonly bears approximately 600 to 900 flowers. |

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Peduncle.

- Commonly varies in length from approximately 2 to 5 cm on average and the diameter commonly is 1 to 3 mm on average. The color is near Yellow-Green Group 146C.

Phyllaries.

- Five in number, elongated and possess pointed tips, approximately 8 to 15 mm in length on average, approximately 2 to 3 mm in width on average, and near Green Group 139A in coloration.

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B. Ray florets

General tonality.

- Upper Surface: Yellow
Group 5D with some very
light red that increases
slightly towards the base.
Such red coloration is
difficult to describe more
fully and commonly
requires the destruction of
the flower for it to become
apparent.

- Under Surface: Yellow
Group 5D.

Number of ray florets.

- Varies with flower position
on the inflorescence and
cultural conditions.
Commonly approximately
120 to 180 on average.

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Size of ray florets. - Varies with position and
commonly range from
approximately 0.8 to
3.5 cm in length on
average and from
approximately 0.2 to
0.6 cm in width on
average.
In contrast the floret
coloration of the parent
'Chadixi' variety is Purple
Group 75C with some
slightly deeper shading and
edges of Purple Group
75B.

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Configuration ray florets. - Acropetal with a dentate apex, a substantially straight base and a smooth margin.

Disc florets. - ~~These commonly are absent under standard growing conditions~~ Disc florets are rarely formed and their presence or absence is influenced by the growing conditions. The observation of such disc florets has been found to be associated with short day cultural conditions. Even when disc florets are present, they typically are present in only a sparse

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quantity and are hidden
from observation while
being disposed beneath the
ray florets. When such
disc florets are sparsely
present, they tend to be
more capable of
observation at the extreme
end of blossom maturity
when the blossoms are
most fully open..

C. Reproductive organs

Androecium.

- ~~Present with ray florets at~~
~~the center of the capitulum.~~
When disc florets are
observed, some
androecium commonly are

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present in ~~such~~ among such
disc florets.

Gynoecium.

- Present with ray florets at
the center of the capitulum
at the end of blooming.

When disc florets are
observed, gynoecium
commonly are absent in
such disc florets.

Pollen.

- Generally formed in only a
~~slight~~ very sparse quantity
at the end of blooming
when disc florets are
present and yellow- orange
in coloration.

Fragrance.

- Weak and typical of
Chrysanthemum.

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Plant:

A. General Appearance

Height.

- Very short, and
approximately 35 cm on
average at four months of
age.

Width:

- Approximately 55 cm on
average at four months of
age.

B. Foliage

Color.

- Upper Surface: Generally
between Green Group
137A and Green Group
139A.
- Under Surface: Generally
between Green Group
137A and Green Group

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139A with slightly more
grey.

Shape.

- Relatively short and
narrow with short inferior
lobes. The shape of the
sinus base between lateral
lobes is rounded.

Size.

- The leaves at the tip of the
stem commonly are
approximately 3.5 cm in
length and commonly are
approximately 1.7 cm in
width. The leaves at the
base of the stem commonly
are approximately 10 cm in
length and commonly are

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approximately 5 cm in
width.

Bearing.

- Petiolate.

Texture.

- Fleshy.

Thickness.

- Moderately thick.

Serration.

- Finely denticulate.

Shape of base of leaf.

- Acute with an obtuse
tendency.

Shape of tip of leaf.

- Mucronate.

Claw in base of sinus
between lateral lobes.

- Absent.

Petiole.

- Approximately 0.5 to 2 cm
in length, and
approximately 2 to 4 mm
in thickness. The
coloration commonly is
very close to that of the
leaves, and generally is
between Green

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Group 137A and Green

Group 139A.

Stems.

- Thin to medium and generally round in cross-section, strongly rigid, and commonly Yellow-Green Group 146C in coloration with no anthocyanin coloration.

Internode length.

- Very short, and commonly approximately 5 to 10 mm.

C. Resistance to Diseases

Requires no particular treatment when compared to other Chrysanthemum varieties.

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D. Resistance to Insects

Requires no particular treatment when compared to other
Chrysanthemum varieties.

E. Response Period

The 'Chanoud' cultivar is natural blooming and the reaction
period is not considered to be a significant characteristic.
However, such reaction period has been observed to
commonly vary between 7.5 and 8.5 weeks.